

Notes for Remarks

To the Ontario Energy Association Annual Conference

Progress, Innovation and Evolution

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Thank you for allowing me to be part of this panel.

This session is meant to be a status report on the progress, innovation and evolution in our sector. There is no question that we have seen significant progress in the past few years. While I will touch on some of that progress, I want to focus the majority of my remarks on the latter two topics ... innovation and evolution.

The progress that we have made is evidenced by the new supply that we have seen come on line over the last few years and the resulting improved supply situation.

I want to revisit a question that was raised at last year's conference ... the question about how many people believed that the coal plants could be shut down in 2014.

I wasn't here last year so I didn't get a chance to raise my hand as one of the believers ... but I understand that a lot of you were sceptical about the timing of the coal shutdown. What we have seen in the past year, and what we are forecasting in the next year and a half, from a supply perspective, should change your mind. I know that if the question was asked today, my hand would be even higher this time around.

So what's happened? Well for one thing, those "paper megawatts" that many of us have talked about for so long are now turning into steel and concrete and real power that I can count on.

The first stage of the 550 megawatt (MW) Portland energy centre was available this summer, with its full capacity expected next summer; the 1,000 MW Greenfield plant near Sarnia is commissioning now as is the 880 MW Goreway plant in Brampton. Both have connected to the grid and have produced power. By Christmas, Ontario for the first time in its history will have more natural gas generation than coal. And that's only the start.

The 580 MW St. Clair natural gas plant near Sarnia is set to begin commissioning, part of the more than 5,000 MW of new or refurbished clean supply coming on line over the next few years.

There has also been progress on new transmission.

The new interconnect between Ontario and Quebec is two-thirds of the way through construction. It will increase import capability by more than 1,200 MW. Hydro One's Bruce to Milton 500 KV line has just been approved by the Ontario Energy Board. That new line will help us to use the additional nuclear and wind from the Bruce area.

At the same time, we are forecasting a one per cent decrease in energy demand for 2008 and a further 1.3 per cent decrease in 2009.

As an aside, let me comment for a moment on the demand situation this past summer.

While the rainy summer weather may have put a damper on some of our vacation plans, the moderate temperatures and precipitation was certainly welcomed by your system operator.

Demands this summer have been no where near what we came to expect over the past five or six years. Our peak was set in early June at just over 24,000 MW, almost 3,000 MW below the record set in 2006. In fact, we have only hit the 24,000 MW mark in four separate hours this summer ... a far cry from 2005 when we had more than 150 hours when demand exceeded that number.

I know we are not going to get weather like this every summer and we have to be prepared for higher peaks when the heat and humidity return. This was clearly demonstrated just last weekend when the humidity from Hurricane Ike caused the demand to jump 2,300 MW or about 15%, from Saturday to Sunday.

Still, our increasing supply, combined with lower demand growth has put an end to the continuing crisis we were subject to on an almost daily basis several years ago. And that has to be seen as progress in anyone's eyes.

We have also seen progress on the market side. We are moving forward with implementation of enhanced day ahead commitment processes (something I will touch on more on in a few minutes), we have established a day ahead price forecast and we are seeing more customers utilize the market price to their advantage.

As you know, the Public sector (as in municipalities, universities, schools and hospitals, fondly known as the MUSH sector) is scheduled to come off the regulated price plan on May 1 and the IESO has been leading the education efforts on this together with the local distribution companies. I understand that more than 50 per cent of the load from this sector has already made the switch.

But while we are making progress, the world around us is not static. The sector we are in is changing as are the needs of the customers we serve. We will need to be innovative in how we address customer needs as the sector evolves.

These are not just price and reliability needs ... sustainability is also a growing concern not only of policy makers but of the constituents they and we serve.

Climate change, or more importantly, the need to reduce the sector's impacts on climate change is our biggest challenge and one that government and customers both expect us to address. It underscores the need for our focus on conservation and an increasing contribution from renewables to meet demand.

While our short term forecasts are calling for a drop in demand, there is a general belief that there will be increased pressure for electricity demand to grow as the cost and supply of oil and ultimately natural gas drive us toward cleaner, cheaper electric alternatives. You only need to look at the transportation sector, and in particular the increasing focus on the electric car, to realize how our sector can be impacted.

Electric cars store energy... something we, as system operators, have never had access to on a large scale. Without storage, we have to make sure there's enough transmission and generation capacity to meet the highest levels of demand. But if Smart Electric Cars charge up at night, when demand is lower, we can maximize the use of our electrical infrastructure.

Electric cars could even send this energy back to the grid during system peak to help maintain reliability. So in theory, you wouldn't need to build a single new power plant to accommodate significant numbers of electric cars.

Some of the U.S. estimates are astounding ... the Department of Energy estimates that in terms of energy capability, the US grid could, right now, support roughly three-quarters of today's cars, pick-up trucks, SUVs and light duty vehicles. This would add 910 TWh annually in consumption to the system. That's roughly a quarter of total US generation. That's six Ontarios. That's 6.5 million barrels of oil each day. And that's a mighty attractive proposition. No wonder Barack Obama is promising to put a million electric cars on the road by 2015 and John McCain wants to offer \$5000 tax credits for each electric vehicle purchase.

Ontario, in some ways is well positioned. For example, we have a growing supply of off-peak generation that can be used to displace other fuels, like gasoline and we are installing smart meters to measure consumption hourly.

But there are challenges. How do you track and bill a mobile customer who can also be a mobile generator? How do you

monitor and perhaps manage the charging and withdrawal rates? How do you modify the distribution and transmission capability to accommodate these mobile power sources?

These questions will require innovative answers.

Innovations in other forms of electricity storage are also emerging. Compressed air storage, batteries, fly wheels, and superconducting magnets are all being actively pursued. Just this summer, we received an application to assess a 1000 MW underground renewable pumped storage project. What I find unique and exciting about this application is the claim that it could be sited in any number of locations in the province and would only require a few acres of surface land once it is operating.

The ability to accommodate these changes will put increased pressure on our infrastructure ... particularly at a time when we need to move to a more sustainable electricity supply ... with its own special needs. We need to enable better use of the existing delivery network, in order to benefit both the customer and the environment.

This helps to explain why interest in the so-called "Smart Grid" continues to climb.

Here in Ontario, I've been joined by a number of industry leaders on the Smart Grid Forum to develop a vision for a provincial smart grid. We have been meeting monthly and a number of interesting presentations are available on our web site.

A Smart Grid, with intelligent monitoring, assessment and communications from generators right through to home appliances could enable a wide array of innovative applications.

Some of these, such as self-healing distribution grids would help distribution companies improve service to consumers. Others such as automated load response could enable system operators to match demand to variable intermittent renewable supplies. Still, others such as in-home appliance sensors could allow consumers to select prices, times and convenience levels that would guide the automated operation of various devices.

Many of these technologies don't need to be invented. But they do need to be sewn together and integrated in new and innovative ways so that their full potential can be realized.

Stay tuned for a report on our smart grid work toward the end of the year.

Evolution is the third and final part of this status report today.

I would normally think about evolution in terms of market evolution ... and I will get to that in a moment ... but the biggest evolution underway is the evolution of our workforce.

Our demographics are changing. The advancing age of our workforce is one of our major challenges. But it can also be one of our opportunities.

Some have referred to those of us who have been around the industry for a long time as DOUGs or “Dumb Old Utility Guys”. The reality is that many of us DOUGs are retiring, and are being replaced by young, energetic men and women, with no ties to the old Ontario Hydro vertically integrated utility world that many of us lived in. I am excited by the innovation that they bring to their work and believe this sector will benefit from it -- provided we nurture and encourage it.

The evolution of our industry is not unique to Ontario, or even North America. It's world wide.

No where is that more apparent than in Europe. Interestingly enough, one of the first trips for our new Minister when he took over this portfolio was across the pond to learn about the potential for renewables and conservation from energy markets in Spain, in Denmark and in Germany.

In Europe, markets have been embraced as an essential means to achieving their needs ... be it combating climate change, achieving energy security or increasing global competitiveness.

In Ontario, our electricity market provides an impartial and cost effective means to support the operation of our electricity system. It ensures the lowest cost dispatch of resources and accommodates a diversity of supply sources.

Yet the market potential in Ontario hasn't been fully realized. I believe, that as in Europe, broad regional North American markets can best help us realize our reliability, economic and sustainability goals.

One of the challenges in Ontario has been and continues to be the current real time pricing model. That was evident during our stakeholder consultations over the past year on day ahead mechanisms.

As you may know, our Board has approved the implementation of the enhanced day ahead commitment processes associated with two of the options that we studied.

The majority of stakeholders were in agreement with this approach. But some stakeholders feel we should have proceeded with the development of an unconstrained Day Ahead Market that would produce binding day ahead prices.

Moving in this direction would further embed the unique difficulties associated with Ontario's unconstrained market design. Simply put, the Unconstrained Day Ahead Market would not deliver the range of benefits associated with the conventional day-ahead markets in surrounding markets ... all of which produce prices based on constrained schedules.

Stakeholders have urged us to take early action on improving the current real-time pricing model. That will become an increasing

part of our market evolution focus even as we implement the enhanced day ahead commitment processes.

In conclusion, the progress that we have achieved is best demonstrated by the significant amount of supply that has and continues to be brought on line.

But we can't just coast, and say "well, it looks like we're on our way to managing the coal phase out." That's only the beginning.

The ball continues to move forward and the complex interaction of local and global economic, political and environmental dynamics will likely cause it to bounce in some odd directions.

I expect the demands on us will, over the next few decades, grow at an increasing rate as this industry evolves. Our system and those that work in this sector will be challenged in ways we can't imagine... and we need to nurture and encourage a new generation of workers to deal with those challenges in new and innovative ways.

Thank you very much. I look forward to your questions.